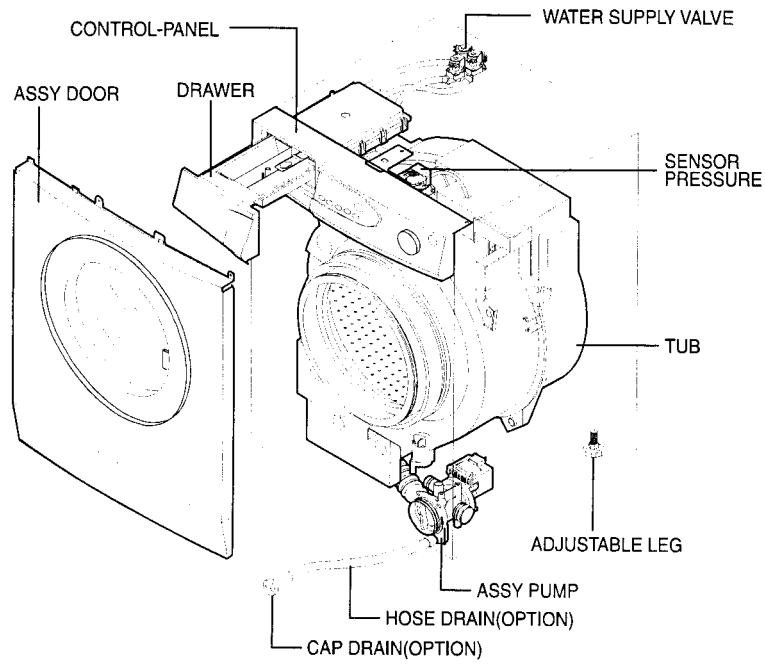
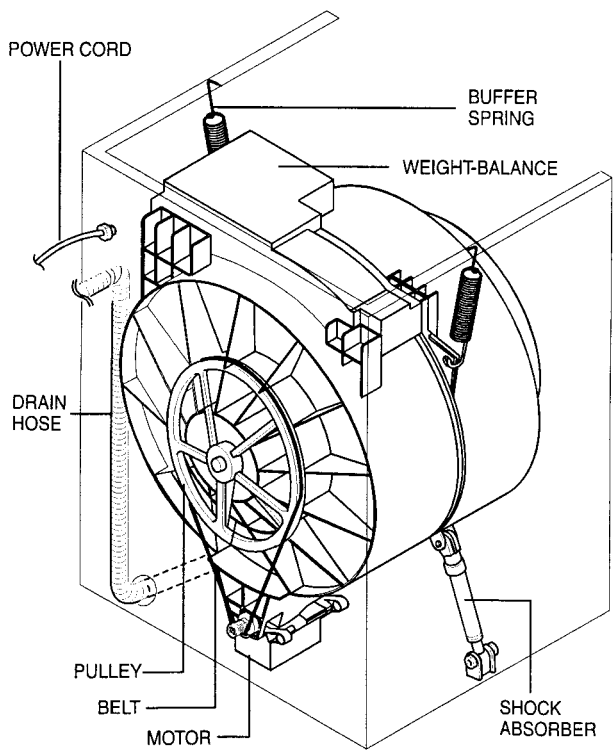
SAMSUNG P1003J

MODEL

SERVICE MANUAL

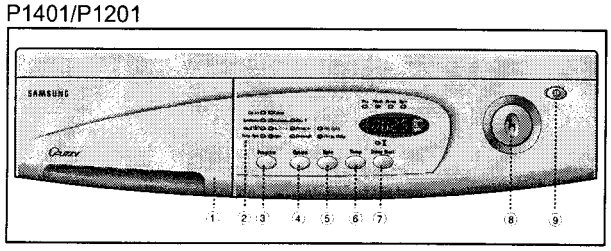
2. Overview of the Washing Machine



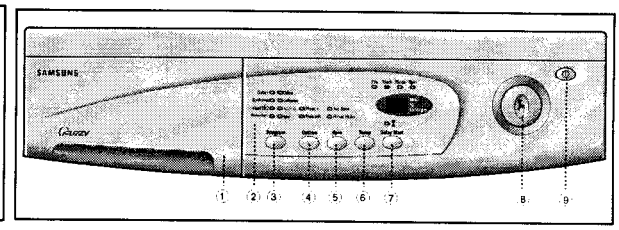


3. Overview of the control panel

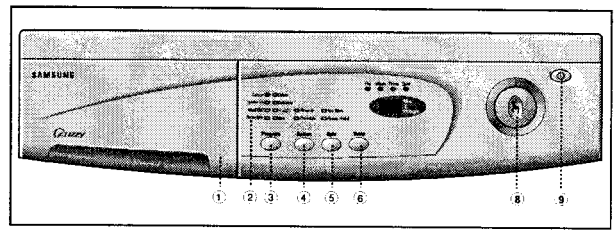
P1401/P1201



P1001



P801



1. Detergent dispenser

2. Display panel

Displays the remaining wash cycle time and error messages.

3. Program button

Press the button to select one of the eight available wash programs.

Cotton, Colour, Synthetic, Delicate, Wool, Quick, Rinse+Spin, Spin

4. Option Button

Press the button repeatedly to cycle through the available partial wash options

P1401/P1201 : Eco⁺ →Rinse⁺→Prewash→(Eco⁺+Rinse⁺) →(Rinse⁺+Prewash)→Cancel→Eco⁺

P1001/P801 : Rinse⁺→Prewash→(Rinse⁺+Prewash)→Cancel

Note : Prewash is available only with Cotton, Colour, Synthetic or Delicate programs.

5. Spin selection button

Press the button repeatedly to cycle through the available spin speed options.

P1401	no, rh, 400, 600, 800, 1000, 1200, 1400 rpm
P1201	no, rh, 400, 600, 800, 1000, 1200 rpm
P1001	no, rh, 400, 600, 800, 1000 rpm
P801	no, rh, 400, 600, 800 rpm

no:no spin,
rh:rinse hold

When pressing this button during operation, you can see the selected spin speed in the display panel.

6. Temperature selection button

Press the button repeatedly to cycle through the available water temperature options (cold water, 30 °C, 40 °C , 60 °C and 95 °C).

When pressing this button during washing, you can see the selected temperature in the display panel.

7. Delay Start button

Press the button repeatedly to cycle through the available delayed start options (from 1 hour to 24 hours in one hour increments).

8. Start/Pause button

Press to pause and restart programs.

9. ⏻ (On/Off) button

Press once to turn the washing machine on, press again to turn the washing machine off. If the washing machine power is left on for longer than 10 minutes without any buttons being touched, the power automatically turns off.

4. General Error Function

·· When an error occurs, this function starts to keep generating error melody sounds and displays error indicators as shown in the followings per corresponding error by blinking in 0.5sec interval until the error status is completely cleared out. In this case, all the driving devices are turned off until the error is cleared out.

1. WATER SUPPLY ERROR
- Display shows 'E1'.
- Water Supply Error occurs when water level frequency does not show changes more than 100Hz or water is not supplied up to the water level presetting for 20 min or more at the time of initial water supply.
- The error status can be cleared by turning POWER S/W OFF and resuming the POWER ON initial status.

2. WATER DRAIN ERROR
- Display shows 'E2'.
- In case the water level frequency is 25.5KHz or less in the initial phase of UNB-detecting cycle.
- Water Drain error can be cleared by turning POWER S/W OFF and resuming the POWER ON initial status.

3. OVER-FLOW ERROR
- Display shows 'E3'.
- Over-Flow error occurs when the water level is in abnormal operation. It can be cleared by turning POWER S/W OFF. Water is drained prior to POWER S/W OFF and it is forced to be drained for 2 min if a frequency of more than 25.24 KHz is detected.

4. DOOR OPEN ERROR
- Display shows 'door'
- Door Open error can be cleared by closing the door.

5. UNBALANCE ERROR
- Display shows 'E4'.
- Laundry load is unbalanced; loosen any tangled laundry.
- If only one item of clothing needs washing, such as a bathrobe or jeans, the final spin result might be unsatisfactory and an "E4" error message will be shown in the display window.
- Unbalance error is cleared by POWER S/W OFF and by resuming the POWER ON initial status.

6. WATER HEATER ERROR
- Display shows 'E5,E6'.
- In case the water temperature rises by 40°C or more in 5 min. or by 2°C less in 10 min after heating is started.
- It can be cleared by turning POWER S/W OFF.

7. ASS'Y PRESSURE S/W ERROR

* Generated Frequency Signal of WATER LEVEL(W/L) S/W (KHz)

Level	Low Level	High Level
Abnormal W/L Frequency	30.00 KHz	15.00 KHz

- If the same signal as the above table is detected for more than 5 seconds, it is a PRESSURE S/W Error.
- When the error occurs, water drain pump will operate for 3 min. and then turn off the water drain pump. Then the display shows 'E7' indicating a pressure s/w error indicator.

8. ABNORMAL WATER TEMPERATURE ERROR

Course	Water Temp
Delicate	50°C or more
Wool	50°C or more

- In case the water temperature is 50°C or more in Delicate and Wool course.
- At the time of initial water supply, if the water temperature is not appropriate, water starts to be drained and it is forced to be drained for 2 min when the abnormal frequency of 25.24KHz is detected.
- Display shows 'E8'.
- This error can be cleared by POWER S/W OFF.

9. WATER LEAKAGE ERROR (E9)
- Water Leakage error occures when water is drained naturally after washing program starts.

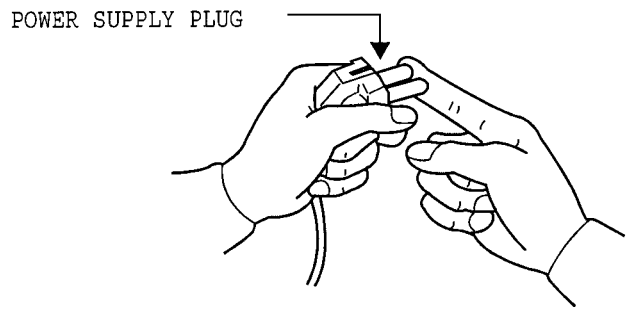
5. Trouble Diagnosis

● As the micom wash machine is configured of the complicate structure, there might be the service call. Below information is prepared for exact trouble diagnosis and suitable repair guide.

Caution for the Repair and Replacement

Please follow below instruction for the trouble diagnosis and parts replacement.

1) As some electronic components are damaged by the charged static electricity from the resin part of wash machine or the human body, prepare the human body earth or remove the potential difference of the human body and wash machine by contacting the power supply plug when the work contacting to PCB is executed.



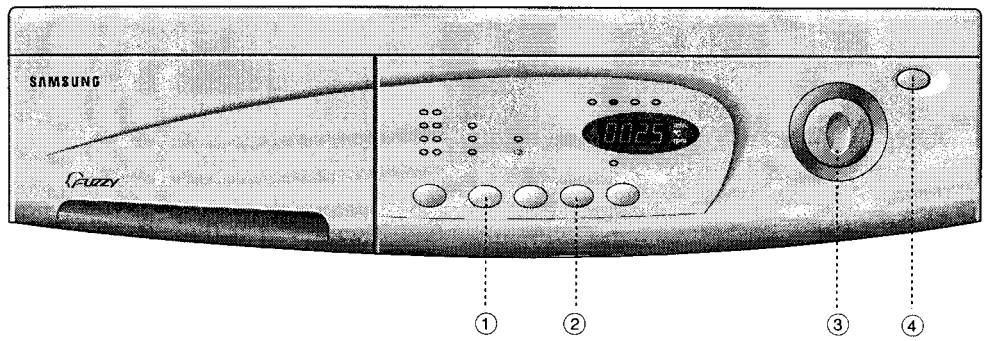
2) Since AC220~240V is applied to the triac T1 and T2 on P.C.B, the electric shock may occur by touching and be careful that the strong and weak electricity are mixed.

3) As the P.C.B assembly is designed for no trouble, do not replace the P.C.B assembly by the wrong diagnosis and follow the procedure of the trouble diagnosis when the micom is not operated normally.

5-1. Trouble Diagnosis

No	Item	Cause and treatment
1	The power is not supplied	- Is the PCB connector connected well? - Is the voltage normal? - Is the power supply plug connected well? - Is the noise filter connected well? - Is the secondary output of the power supply transformation normal? - Is the fuse disconnected? (option) • If above points are not found, the PCB assembly is out of order. Replace it.
2	The water is not supplied.	- Is the knob open? - Did you push START/PAUSE button after selecting the course? - Is the water supply valve connected well? - Is the winding of the water supply valve continuous? - Is the connection and operation of the pressure switch normal? • If above points are not found, the PCB assembly is out of order. Replace it.
3	The wash does not start though the water supply is stopped.	- Is the connection and operation of the pressure switch normal? - Is the pressure switch hose damaged so that the air is leaked? - Is the pressure switch hose bent? - Check the operation of the water level switch. • If above points are not found, the PCB assembly is out of order. Replace it.
4	The drum does not rotate during washing.	- Is the belt connected well? - Is the winding of the motor continuous? (Rotor winding, stator winding, generator) - Is the motor protector normal? • If above points are not found, the PCB assembly is out of order. Replace it.
5	The drum rotates by one direction during washing. (The drum rotates to one direction for SPIN.)	- The PCB assembly is out of order. Replace it. (Inversion relay open trouble)
6	Drainage problem.	- Is the drainage hose bent? - Is the winding of the drainage pump continuous? - Is the drain filter clogged by the waste? • If above points are not found, the PCB assembly is out of order. Replace it.
7	Dehydration problem.	- The unbalance is detected. - Put in the laundry uniformly and start again.
8	Abnormal noise during SPIN.	- Is the pulley nut loosen? - Is the transport safety device removed? - Is the product installed on the level and stable place? (Little noise may be generated during the high-speed SPIN.)
9	Leak breaker or current/leak breaker is down during washing.	<When the leak breaker and current breaker is installed separately> - When the leak breaker is down, check and make the earth of the outlet. - When the current is down, the current is leaked. <Is the breaker down when the leak/current breaker is combined?> - Check the rated capacity of the current and leak breaker. The current breaker may be down due to the lack of the current when the wash machine and other apparatus are used. In this case, execute the cold water wash to check whether the current capacity is lack.
10	The heating is not executed.	- Is the wash heater terminal unplugged? - Is the wash heater normal? - If above points are not found, the PCB assembly is out of order. Replace it.

6. Test Mode



1. Driving Compartment Test Mode

A. Hold down "1" and "2" keys simultaneously and then press POWER S/W "4" on.
(Whole lamps turn on and display show "tl" after 3 Seconds.)

B. The driving compartment can be tested when you press "3" key right after entering into the initial stage of the TEST MODE.

• **Driving Compartment Test**

Pre-wash VALVE ON(0.3sec) → OFF(0.3sec) → COLD VALVE ON(0.3sec) → [OFF(0.3sec) → HOT VALVE ON (0.3sec) : ***OPTION***] → OFF(0.3sec) →Rinse VALVE ON(0.3sec) → OFF(0.3sec) → Pump MOTOR ON(0.3sec) → OFF(0.3sec) → MOTOR Left (0.5sec) → OFF(0.5 sec) → MOTOR Right (0.5sec) → OFF(0.3sec) → HEATER RELAY ON(0.3sec) → OFF(0.3sec) → DOOR OPEN (Function continues when door is closed)

2. THERMISTOR TEST MODE

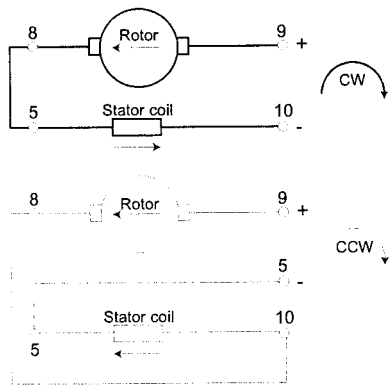
A. Hold down "1" and "2" keys simultaneously and then press POWER S/W "4" on.
(Whole lamps turn on and display show "tl" after 3 Seconds.)

B. Press the "1" key and display shows "t2"

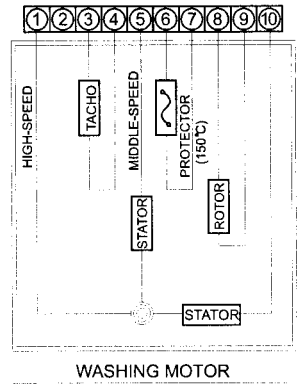
C. Press the "3" key and display shows the inside temperature of tub.

7. Designation of Main Components

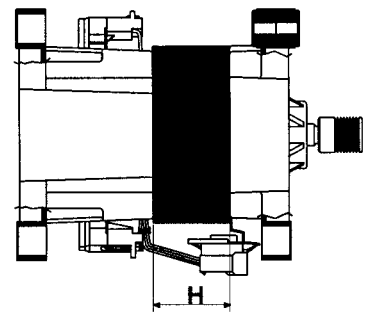
7-1 Normal / Reverse Revolution of Motor and R. P. M. Control



<Figure1>



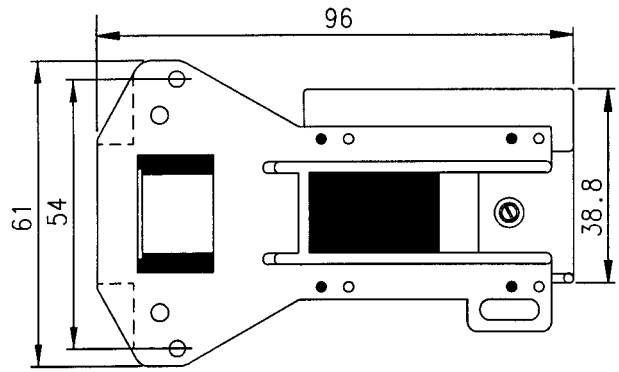
<Figure2>



<Figure3>

(± 7%)	STATOR(5.10)	STATOR(5.1)	ROTOR(8.9)	TACHO(3.4)	PROTECTOR(6.7)	"H"(mm)	Code-No	Remark
Resistance value	2.07 Ω	0.90 Ω	2.35 Ω ↑	42.7 Ω	0	45	DC31-00002C	B
Rated value	220~240V / 50Hz							

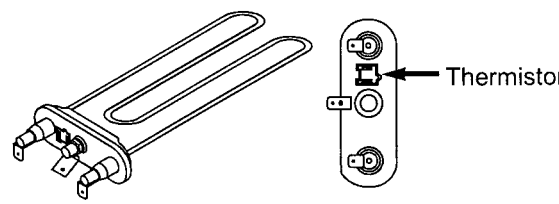
7-2 Door safety Device



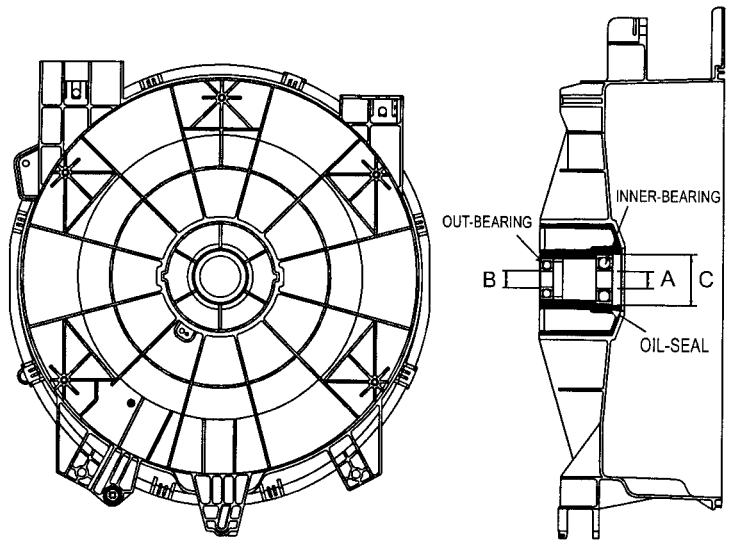
DC61-00122A

7-3 Heater

1) **Capacity : AC 230V/2000W**
2) **Location : Bottom of TUB**
3) **Function : Raise the water temperature supplied at the wash process.**
4) **Resistance value : 23Ω ~ 29Ω**
5) **Thermal Fuse : 128°C**



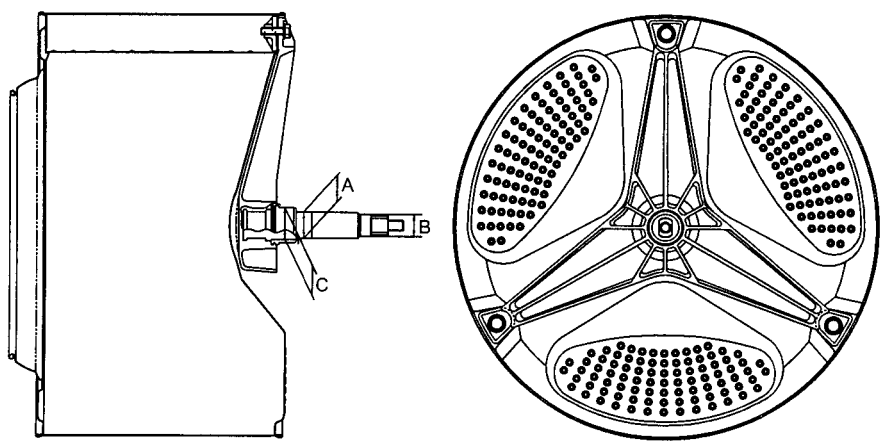
7-4 ASSY-TUB BACK



(unit : mm)

TYPE	INNER-BEARING(A)	OUT-BEARING(B)	OIL-SEAL(C)	Assy-Housing Bearing(D)	Assy-Tub Back	REMARK
I	ø 30	ø 25	ø 43.9	DC97-00419A	DC97-00214A	P1401
II	ø 30	ø 25	ø 43.9	DC97-00125A	DC97-00214B	P1001/P1201
III	ø 20	ø 17	ø 24.3	DC97-00215D	DC97-00214K	P801

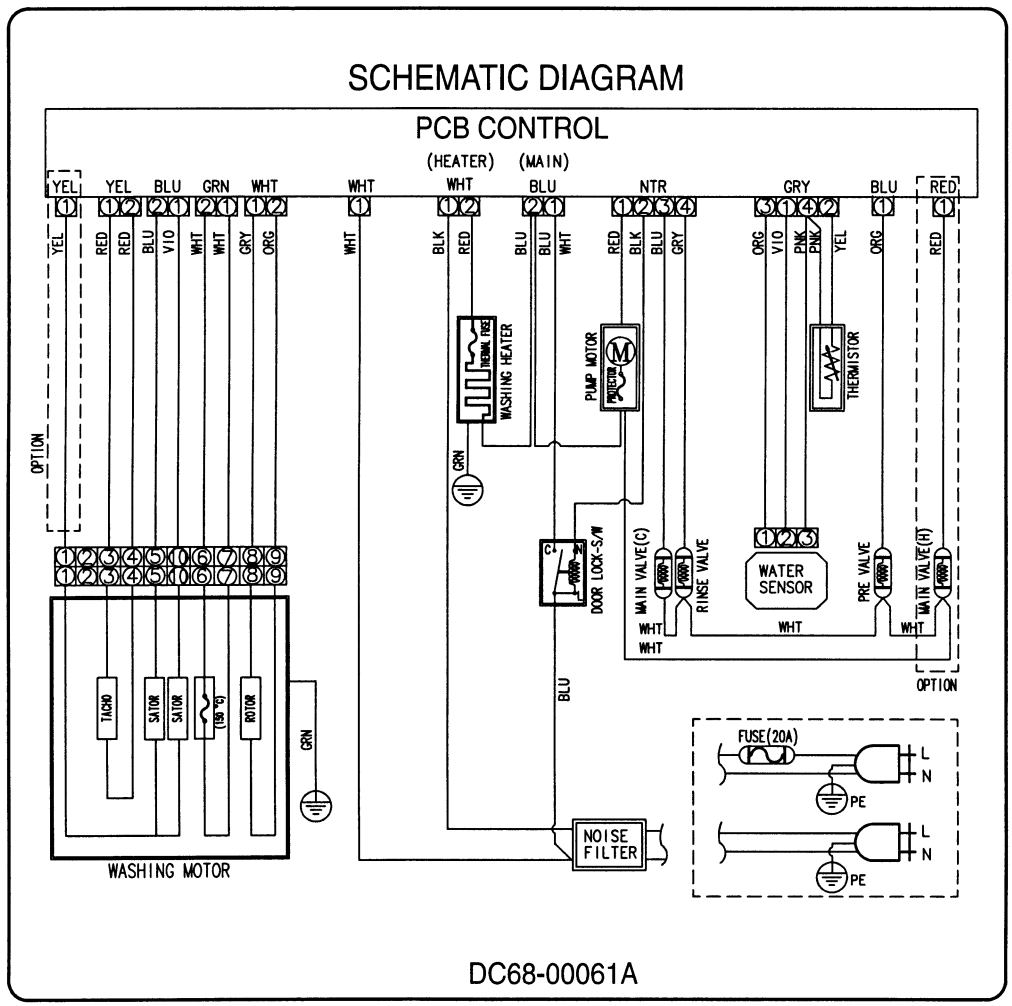
7-5 ASSY- DRUM



(unit : mm)

TYPE	(A)	(B)	(C)	CODE-NO.	REMARK
I	ø 30	ø 25	ø 44.7	DC97-01463A	Lifter type P1001/P1201/P1401
II	ø 30	ø 25	ø 44.7	DC91-12281A	P1001/P1201
III	ø 30	ø 25	ø 44.7	DC97-00785B	P1401
IV	ø 20	ø 17	ø 25	DC97-00785A	P801

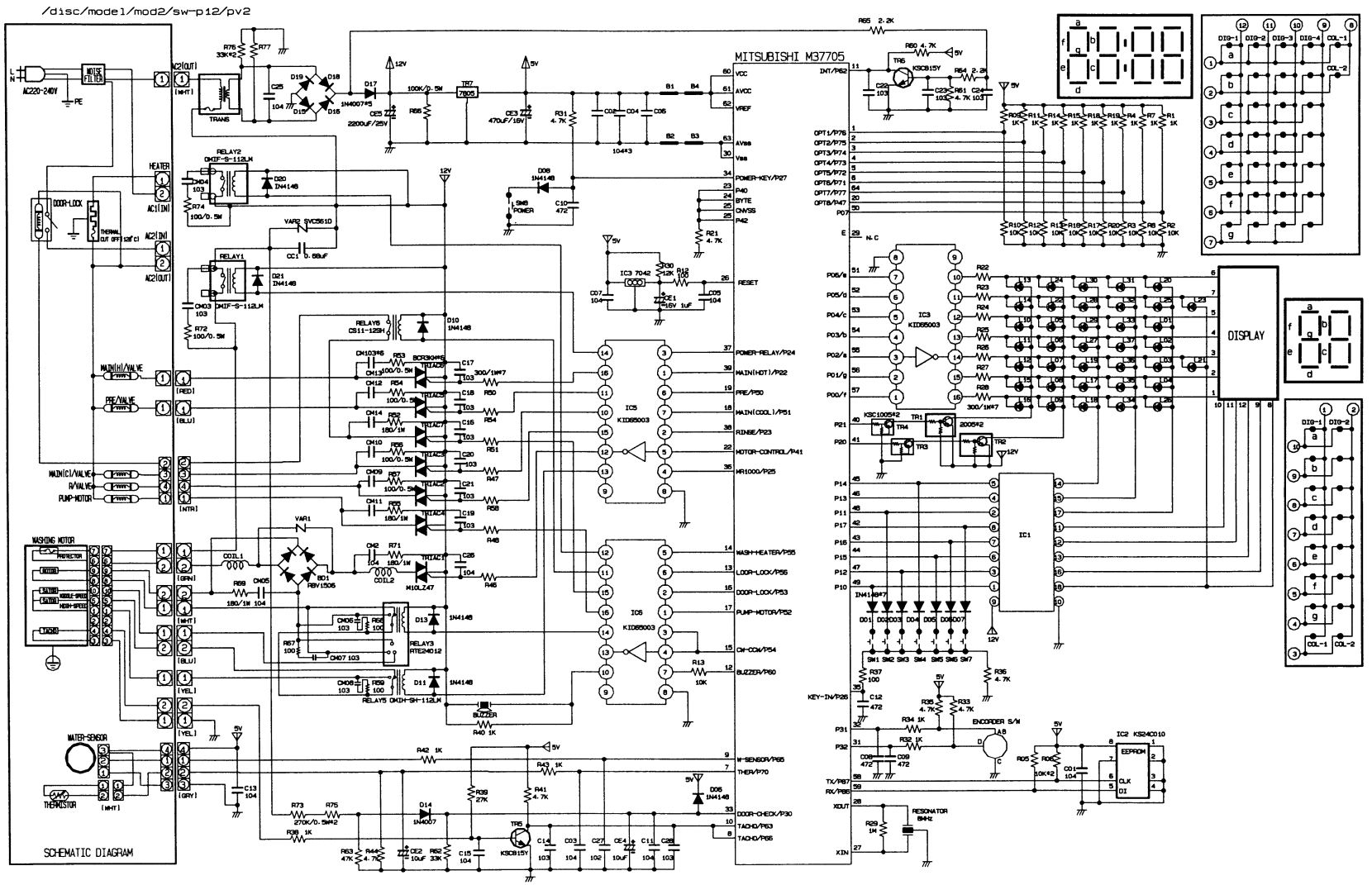
8. PCB Schematic Diagram



8-1. WB : ASSY-PCB Part List

NO.	Part Code	Code No.	Q'ty	Description	Specificatio	Remark
1	WB002	1401-001007	1	THYRISTOR-TRIAC	10A,SM10LZ47(TOSHIBA)	TRIAC1
2	WB002	1401-001024	5	THYRISTOR-TRIAC	2A,SM2LZ47(TOSHIBA)	TRIAC 2~6
3	WB003	0402-001023	1	DIODE-BRIDGE	RBV1506,600V,15A,SIP-4	BD1
4	WB004	3501-001180	1	RELAY-MINIATURE	12V DC,RTE24012	RELAY3
5	WB004	3501-001156	2	RELAY-POWER	12VDC,0.53W,16000MA,1FORMA	RELAY 5
6	WB004	3501-001157	3	RELAY-POWER	12VDC,0.53W,16000MA,1FORMC	RELAY 1,2
7	WB004	3501-001007	1	RELAY	12Vdc,200mW,5A,(TAKAMISAYA)	RELAY6
8	WA010	DC26-00005B	1	TRANS-FORMER	450MA,220~240VAC,11VDC	TRANS
9	WB003	0402-000137	6	DIODE-RECTIFIER	1N4007,1000V,1A	D15~D19
10	WB006	0504-000130	2	TR-DIGITAL	KSR1105	TR3,TR4
11	WB006	DE13-20016A	1	IC-VOLT REGU.	KA7805A	TR7
12	WB006	0504-000159	2	TR-DIGITAL	KSR2105	TR1,TR2
13	WB006	0501-000465	1	TR-SMALL	MMBT390X	TR5,TR6
14	WB007	1202-000141	1	IC-VOL. COMP	7033,SOT-89	IC4
15	WB008	2802-001058	1	RESONATOR-CERAMIC	8MHz,0.2%,TP,10x5x8mm	RESO
16	WB007	DE13-20017A	3	IC-DRIVE	KID65003AP,DIP,16P,STICK	IC3,IC5,IC6
17	WB007	1103-001160	1	IC-EEPROM	4C010,128X8BIT,DIP,8P	IC2
18	WB009	DE30-20016A	1	BUZZER	CBE2220BA,STICK	BZ
19	WB010	3404-001022	7	SWITCH-TACT	15V,20mA,130°±40gf,6x6x5mm	SW 1~7
20	WB011	DE07-20040A	*	LED LAMP	SLH-34VC70F,RED,T,PI5	
21	WB012	0703-001056	1	LED DISPLAY	Y-GRN,4dig,7seg,46X19X24.6mm	

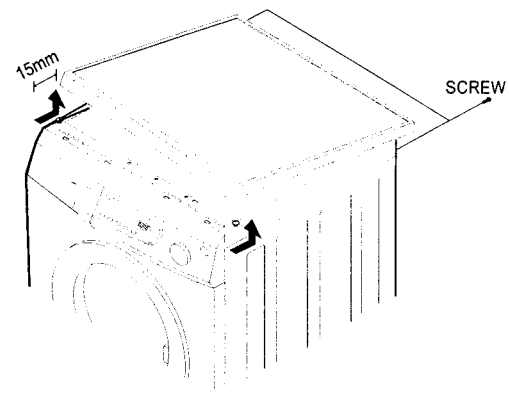
8. PCB CIRCUIT DIAGRAM



9. Assemble and Disassemble

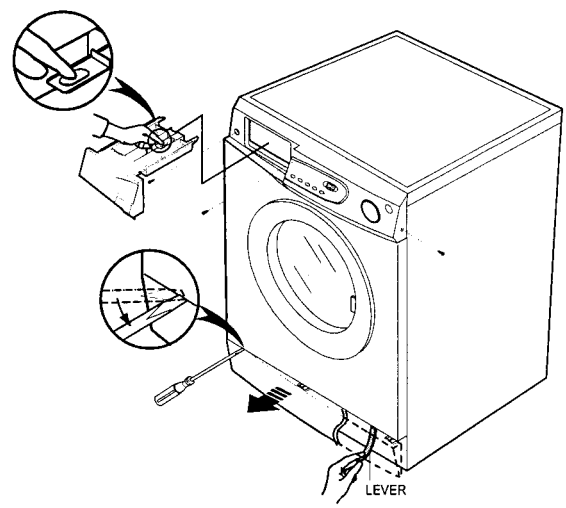
1. ASS'Y-COVER TOP

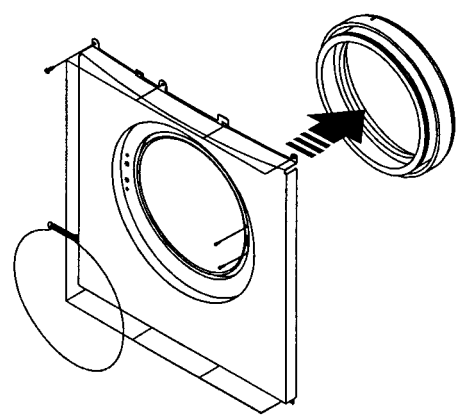
1) Remove two screws fixing the top-cover on back side.
2) Push the top-cover back about 15mm and pull it up.
3) It's possible to exchange and service Assy-Panel (PCB), the pressure-sensor, the noise-filter, the water valve and trans(option).



2. FRAME FRONT

1) Remove the top-cover and the ass'y drawer.
2) Remove two screws fixing the control-panel on front side and the screw on right side.
3) Remove the cover-front(L) by using the (-)driver.
4) Pull the lever and open the ass'y-door.
5) Part the diaphragm and the wire diaphragm away from the frame-front.
6) Remove the eight screws fixing the frame-front.
7) It's possible to exchange and service the heater, the pump, the shock-absorber and the door lock s/w.

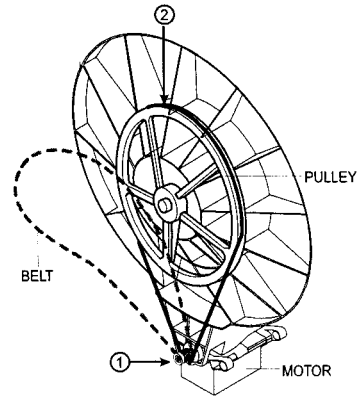




9. Assemble and Disassemble

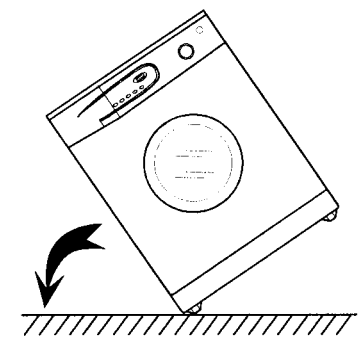
3. BELT

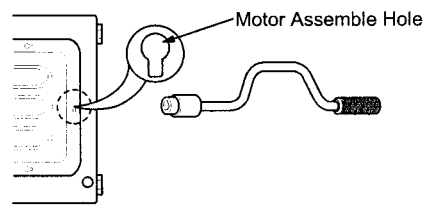
1) Remove the top-cover.
2) Disassemble and assemble the belt.
3) Check the belt is located at center of the motor-pulley.
<When assemble the belt>
Hook the belt on the motor pulley 1) and place it around the pulley 2).



4. MOTOR

1) Lay down the washer on left side.
2) Remove the wire housing from the motor.
3) Remove the bolt fixing the motor with the box drive on back side.
4) Remove the motor.



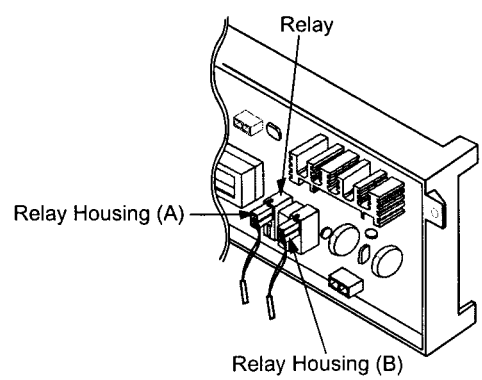


5. How to Assemble the RELAY Housing.

<CAUTION>
Insert the Relay Housing to the Relays on the opposite direation each other.

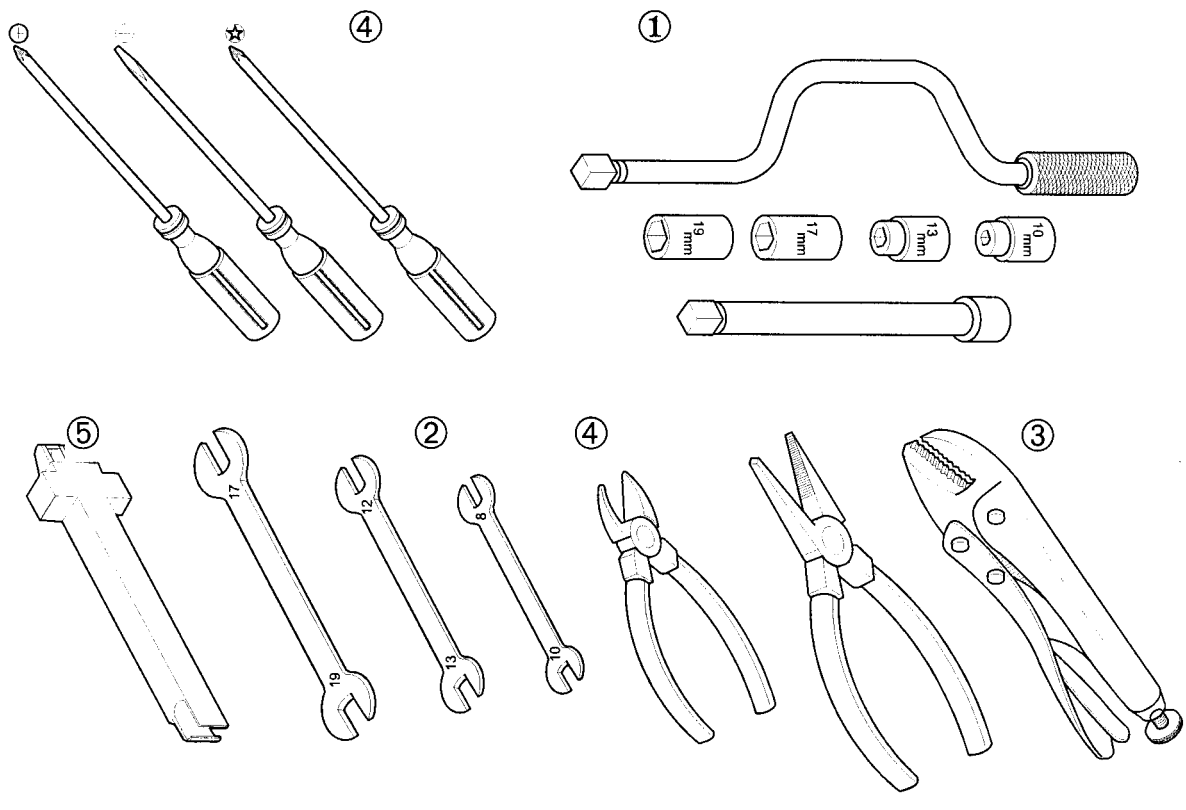
[Relay Housing Color]

A	B
WHITE	BLUE

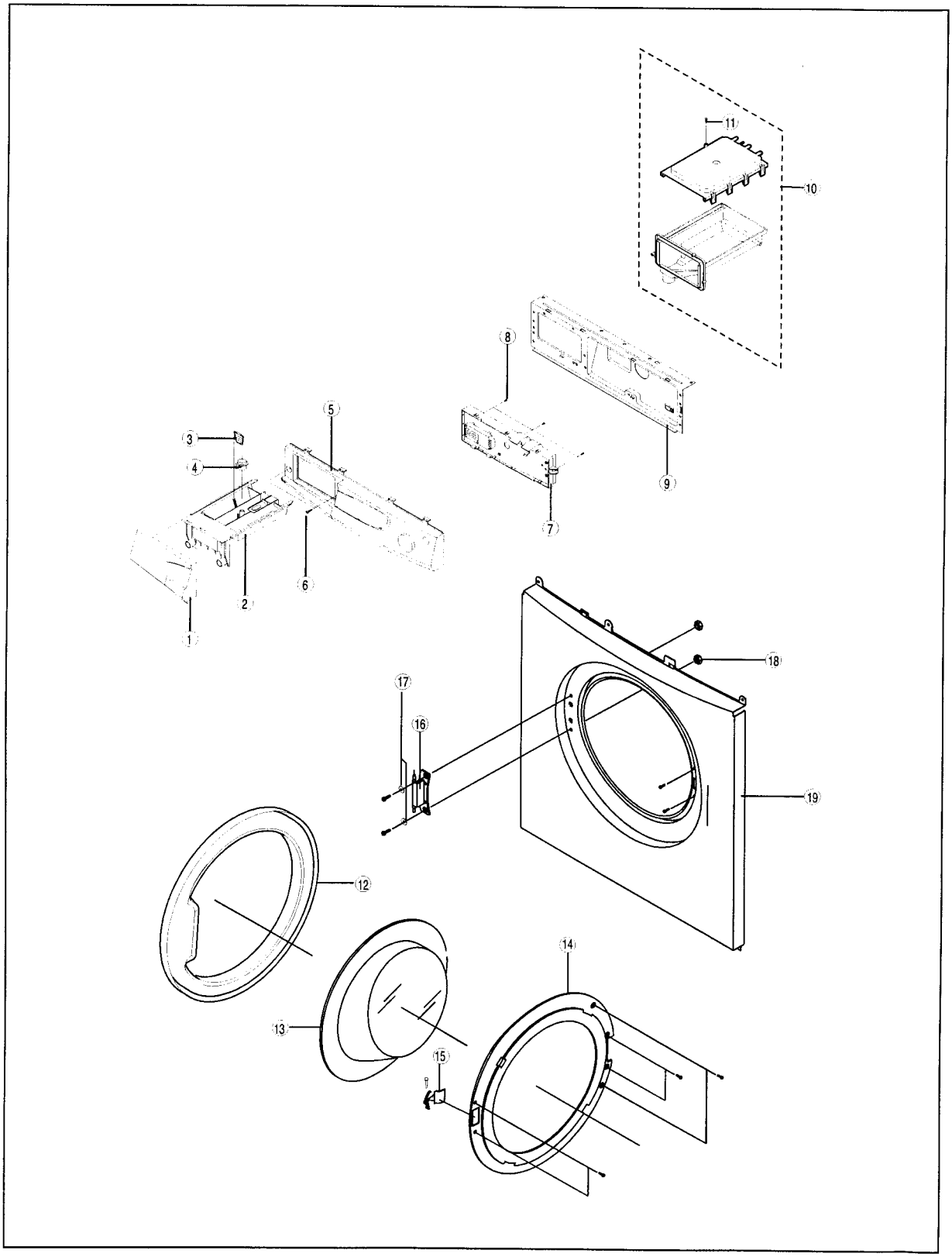


10. Tools for Disassembly and Assembly

NO.	TOOL		
①	Box driver	10mm 13mm 17mm 19mm	Heater (1) Motor (1), Balance (5) 2 holes of each left and right of the shock absorber 1 Pulley hole
②	Double-ended spanner	10, 13 17, 19mm	Replaceable for the box driver. Since the bolt runs idle when the box driver is used, use the box driver 17mm.
③	Vice pliers		Tool to protect the idle and abrasion of the bolt for the box driver.
④	Other(Driver, Nipper, Long nose)		General tools for the after service.
⑤	JIG for the Tub		1 (Disassemble and Assemble)



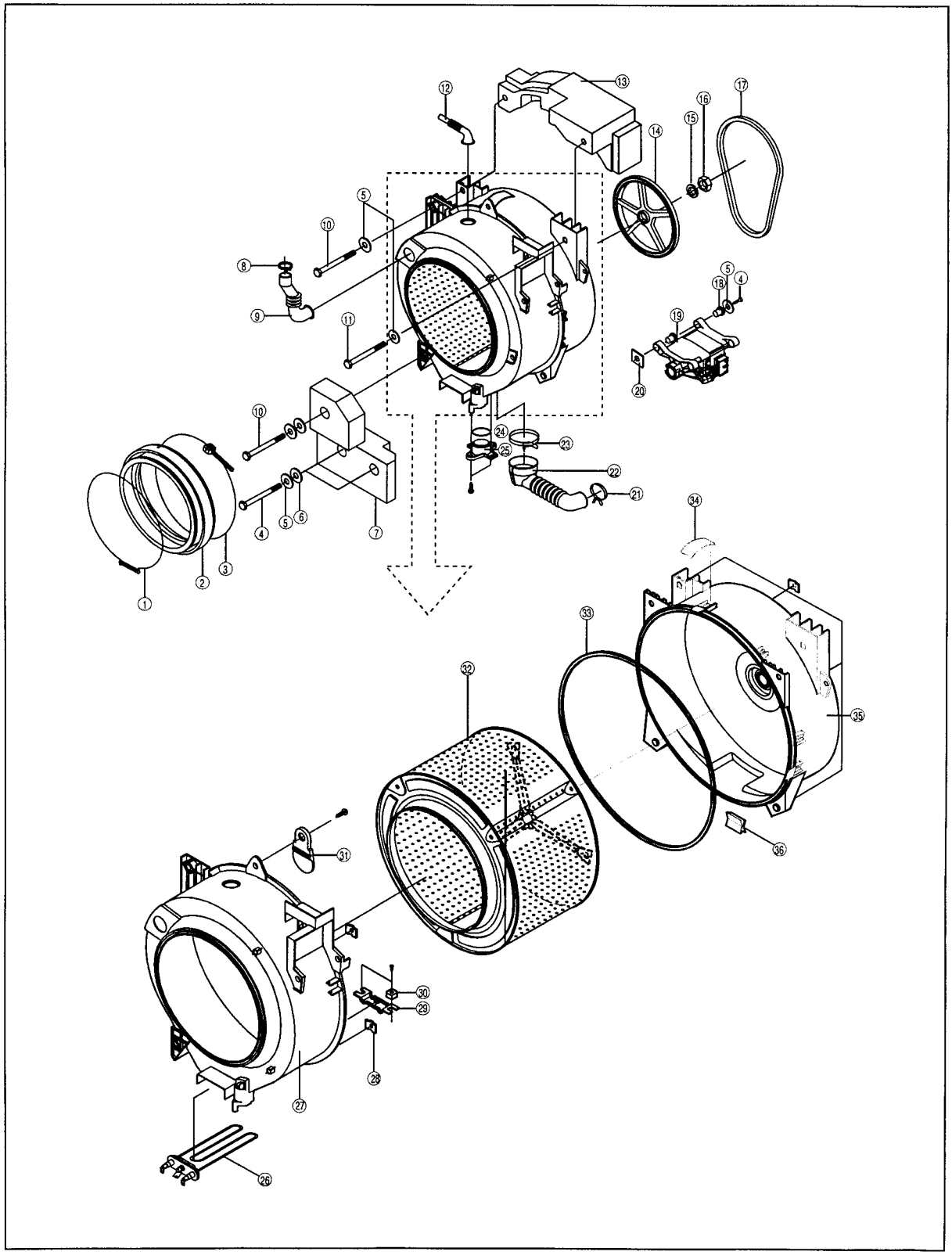
11. WC:TOP(FRONT) - Exploded View



11-1. WC:TOP(FRONT) Parts List

No.	Location No.	Description	Code No.	Q'ty	P801	P1001	P1201	P1401
1	WCD01	PANEL - DRAWER	DC63-00030M	1	●	-	-	-
			DC63-00030L	1	-	●	-	-
			DC63-00030K	1	-	-	●	-
			DC63-00030J	1	-	-	-	●
2	WCD02	BODY-DRAWER	DC61-30348A	1	●	●	●	●
3	WCD03	GUIDE-LIQUID	DC61-60498A	1	●	●	●	●
4	WC005	CAP-RINSE	DC61-10687A	1	●	●	●	●
5	WC001	ASSY-PANEL CONTROL	DC97-01328C	1	●	-	-	-
			DC97-01328A	1	-	●	●	●
6	WZ001	SCREW TAPPING	6002-000445	2	●	●	●	●
7	WB001	ASSY PCB PARTS	MF-P801-00	1	●	-	-	-
			MF-P1001-00	1	-	●	-	-
			MF-P1201-00	1	-	-	●	-
			MF-P1401-00	1	-	-	-	●
8	WZ001	SCREW TAPPING	DC60-20049A	3	●	●	●	●
9	WCD04	ASSY-FRAME PLATE(U)	DC97-00417A	1	●	●	●	●
10	WCD05	ASSY-HOUSING DRAWER	DC91-12085A	1	●	●	●	●
11	WZ001	SCREW TAPPING	DC60-20049A	1	●	●	●	●
12	WCD07	COVER-DOOR	DC61-00055A	1	●	●	●	●
13	WCD08	DOOR-GLASS	DC61-00013A	1	●	●	●	●
14	WCD09	HOLDER-GLASS	DC61-00057A	1	●	●	●	●
15	WCD10	LEVER-DOOR	DC66-00016A	1	●	●	●	●
16	WCD11	ASSY-HINGE	DC97-00100A	1	●	●	●	●
17	WZ008	WASHER-PLAIN	DC60-60025C	2	●	●	●	●
18	WZ016	NUT-FLANGE	DD60-50018A	2	●	●	●	●
19	WCD12	ASSY-FRAME FRONT	DC97-00702A	1	●	●	●	●

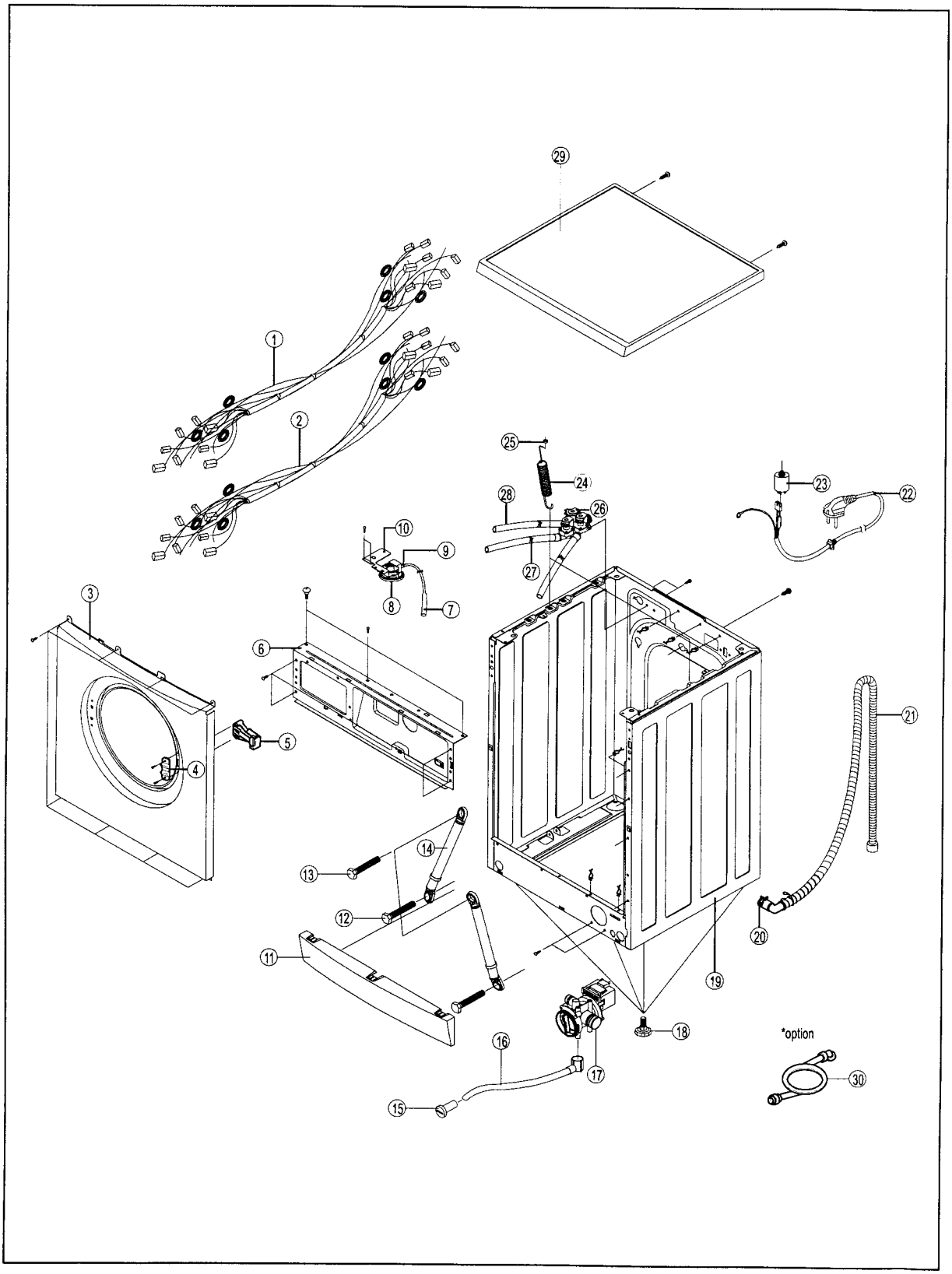
12. WD : TUB - Exploded View



12-1. WD : ASSY-TUB - Parts List

No.	Location No.	Description	Code No.	Q'ty	P801	P1001	P1201	P1401
1	WDD01	ASSY-WIRE DIAPHRAGM	DC91-12078A	1	●	●	●	●
2	WDD02	DOOR-DIAPHRAGM	DC61-20219A	1	●	●	●	●
3	WDD03	ASSY-CLAMP DIAPHGRAM	DC97-00850A	1	●	●	●	●
4	WDD04	BOLT-W.MOTOR	DC60-40138A	3	●	●	●	●
5	WZ008	WASHER-PLAIN	DC60-60044B	6	●	●	●	●
6	WZ009	WASHER-NYLON	DC60-60040A	3	●	●	●	●
7	WDD05	WEIGHT-BALANCER(L)	DC66-60154A	1	●	●	●	●
8	WZ010	BAND RING	DC65-60125A	1	●	●	●	●
9	WDD06	HOSE-DRAWER TUB	DC62-10305A	1	●	●	●	●
10	WZ011	BOLT-HEX	DC60-40140A	2	●	●	●	●
11	WZ012	BOLT-FLANGE	DC60-40132B	1	●	●	●	●
12	WD007	HOSE-AIR	DC62-10303A	1	●	●	●	●
13	WDD07	WEIGHT-BALANCER(U)	DC66-60153A	1	●	●	●	●
14	WD006	PULLEY	DC66-10176B	1	●	●	●	●
15	WZ014	WASHER-SPRING	DC60-60049A	1	●	●	●	●
16	WZ013	NUT-HEX	DC60-50148B	1	●	●	●	●
17	WD008	BELT-TRANSMISSION	DC66-10139B	1	●	●	●	●
18	WDD08	CUSHION-MOTOR	DC61-00041A	1	●	●	●	●
19	WDD09	MOTOR-DRUM	DC31-00002C	1	●	●	●	●
20	WZ013	BRACKET-NUT	DC61-00201A	1	●	●	●	●
21	WZ010	BAND RING	DC65-60118F	1	●	●	●	●
22	WDD10	HOSE-FILTER TUB	DC62-10304A	1	●	●	●	●
23	WZ015	CLAMP-HOSE	DC61-60497A	1	●	●	●	●
24	WDD11	PACKING-TRAP	DC62-40184A	1	●	●	●	●
25	WD009	CAP-TRAP	DC61-10676A	1	●	●	●	●
26	WDD12	HEATER	DC47-00001A	1	●	●	●	●
27	WDD13	TUB-FRONT	DC61-30346A	1	●	●	●	●
28	WDD14	BRACKET-NUT	DC61-40348B	5	●	●	●	●
29	WDD15	BRACKET-HEATER	DC61-40344A	1	●	●	●	●
30	WDD16	SPACER-HEATER	DC61-60496A	2	●	●	●	●
31	WDD17	VANE-CHECK	DC62-20311A	1	●	●	●	●
32	WDD18	ASSY-DRUM	DC97-00785A	1	●	-	-	-
			DC91-12281A	1	-	●	-	-
			DC97-00785B	1	-	-	●	●
33	WDD19	PACKING-TUB	DC62-40183A	1	●	●	●	●
34	WDD20	CLIP-TUB	DC61-60499B	8	●	●	●	●
35	WDD21	ASSY-TUB BACK	DC97-00214K	1	●	-	-	-
			DC97-00214B	1	-	●	-	-
			DC97-00214A	1	-	-	●	●
36	WDD20	CLIP-TUB	DC61-60520A	1	●	●	●	●

13. WE:CASE - Exploded View



13-1. WE:ASSY CASE OUTER - Parts List

No.	Location No.	Description	Code No.	Q'ty	P801	P1001	P1201	P1401
1	WA006	ASSY-M.WIRE HARNESS	DC96-00052B	1	●	●	●	●
2	WA007	ASSY-WIRE HARNESS(SUB)	DC96-00053B	1	●	-	-	-
			DC96-00053A	1	-	●	●	●
3	WCD12	ASSY-FRAME FRONT	DC97-00702A	1	●	●	●	●
4	WED05	GUIDE-LEVER	DC61-60142A	1	●	●	●	●
5	WAD01	DOOR-LOCK S/W	DC61-00122A	1	●	●	●	●
6	WCD04	ASSY-FRAME PLATE(U)	DC97-00417A	1	●	●	●	●
7	WED04	HOSE-PRESSURE	DC62-10311A	1	●	●	●	●
8	WA002	SENSOR PRESSURE	DC32-30006P	1	●	●	●	●
9	WZ015	CLAMP-HOSE	DC61-60359D	1	●	●	●	●
10	WED05	BRACKET-PRESSURE	DC61-40345A	1	●	●	●	●
11	WED06	COVER-FRONT(L)	DC61-10672A	1	●	●	●	●
12	WZ011	BOLT-HEX	DC60-40144A	2	●	●	●	●
13	WZ011	BOLT-HEX	DC60-40141A	2	●	●	●	●
14	WED07	DAMPER-SHOCK	DC66-60149A	2	●	●	●	●
15	WED08	CAP-DRAIN	DC61-10673A	1	●	●	●	●
16	WD108	HOSE-DRAIN	DC62-10302A	1	●	●	●	●
17	WA003	ASSY-PUMP DRAIN	DC96-00115A	1	●	●	●	●
18	WE005	ASSY-LEG	DC91-12292A	4	●	●	●	●
19	WED09	ASSY-PAINT FRAME	DC99-00060A	1	●	●	●	●
20	WZ010	BAND RING	DC65-60125B	1	●	●	●	●
21	WZ005	ASSY-HOSE DRAIN(O)	DC97-00139B	1	●	●	●	●
22	WA001	ASSY-POWER CORD	DC96-00146A	1	●	●	●	●
23	WAD02	FILTER-EMI	DC29-00003A	1	●	●	●	●
24	WED10	SPRING-HANGER	DC61-70216C	2	●	●	●	●
25	WED11	SLEEVE-PLUG	DC61-60180A	3	●	●	●	●
26	WA009	VALVE-WATER(COOL)	DC62-30313A	1	●	●	●	●
27	WZ015	CLAMP-HOSE	DC61-60063B	6	●	●	●	●
28	WED12	HOSE-DRAWER	DC62-10068A	3	●	●	●	●
29	WCD13	ASSY-COVER TOP	DC97-00851A	1	●	●	●	●
30	WZ007	HOSE WATER(C)	DC62-10289B	1	●	●	●	●